

DEWEY'S VIEW ON KNOWLEDGE AND ITS EDUCATIONAL IMPLICATIONS. CRITICAL CONSIDERATIONS

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1. Introduction

No single individual has influenced educational thinking and practice in our century more than John Dewey, the longlived American with an impressive intellectual dynamo, an unusual talent to perceive social and psychological processes and events, and an almost never-ending output of articles and books. The remarkable and lasting impact of his educational thinking may have many reasons, among the major ones are his special blend of talents, his strong interest in society and democracy, his preoccupation with the well-being of humans in general and children in particular, and his ability to write to teachers in a way that kept their attention and went to their hearts.

In the history of educational writings, Dewey's are an outstanding example of a contribution that both enlightened and inspired. Teachers recognized the truth in his observations of the pupil's institutional learning situations. They had to admire both his insights into children's expectations of what school life could mean to them, as well as his understanding of their frustrating experiences with the curriculum of the time (Dewey, 1902). They may have read with interest his remarkable descriptions of the processes of communication, in general as well as in educational contexts, and his manylayered inventive and eye-opening interpretations of them (1916, pp. 4-5; 1932). And perhaps most of all

they may have been taken by his analyses of the importance of schools as agents for social change (1897, 1899, 1916). Dewey made educators rethink and come up with new assessments of their professional ideals and activities. And so do his writings today. They have stood the test of time remarkably well.

Dewey got many followers, at home as well as abroad, who were attracted to his work for different reasons, some by moral and psychological ones (children suffered in dull and strictly disciplined schools, and deserved to have their needs better met). Others by political ones («education is the fundamental method of social progress and reform» (1887, Article V)). And still others may have been attracted by the intellectual challenges (since pedagogy had to be based on sociological, psychological and ethical thinking, and there was a need for new solutions in order to implement the change).

But it is unlikely that followers were motivated for epistemological reasons, although John Dewey published an impressive number of works on the theory of knowledge, starting before the dawn of our century. (One exception was William Heard Kilpatrick (1939, Tenenbaum, 1951)). Probably these writings were unknown to educators since most of them were published as philosophical texts either in books like *Experience and Nature* (1925/1958), *Philosophy and Civilization* (1931/1963), *The Quest for Certainty* (1929/1960) and *Logic: The Theory of Inquiry* (1938), or as articles in philosophical journals or books of readings (1907, 1908, 1910), although there is at least one example of an epistemological article aimed at teachers (1908-1909), and one at a more unspecified audience (1909b). These texts were produced with other readers than teachers in mind. They contained few if any examples from school life, they did not refer to or describe how the children thought and felt. And the ideas and the reasoning presented, the whole discourse, were given a technical flavour common to the art, and presented in intricate sentences often making it less than easy to grasp the meaning. Thus Dewey's epistemological writings were mostly out of sight and out of reach for educators at the time. It is therefore more than likely that educators adapted Dewey's educational ideas and practical proposals without knowing his theory of knowledge.

But is it not reasonable to suggest that there should be a sort of connection between an epistemology underlying an educational theory, and practical results of that theory? So, if there is an educational theory based on a known epistemology, should one not expect an outcome of schooling mirroring the theory of knowledge behind it? Likely as it may be, the fact is that the history of education shows few cases where

educational theory and practice are based on an epistemology. The case of Dewey is one of these rare ones. Moreover, his educational theory rests upon a rather consistent platform of epistemological arguments. Dewey was aware of the importance of a relationship between theories of knowledge and education. And it is evident that at least one of his intentions with his theory of education and the pedagogical practice deduced from it, was to give the kids the type of knowledge he assessed as most important and valuable.

Since there are clear logical connections between Dewey's epistemology and his educational theory, a practical result of his pedagogy should be 'knowledge of the Deweyan type' on the part of children. Further, since teachers at the outset did not know the characteristics of this type of knowledge, nor that it would show up in the results of their teaching, what came out of their work may have surprised some of them. Reactions may have varied from passive acceptance to wondering and questioning to criticism and anger.

Do we have a problem here? The answer depends totally on whether the epistemology at hand is a valid one or not. If the theory is valid, nobody should be worried. If it is not, then there is a problem at hand. The nature of the problem particularly concerns questions like what is worth knowing and learning, what kinds of knowledge, and how should teaching be performed, how should children go about their tasks, — to some extent also the 'why'?

Dewey's theory of knowledge was mostly inspired by the thinking of William James who coined his philosophy 'pragmatism' (James, 1907). James' reasoning was strongly influenced by his friend, Charles Sanders Peirce, an impressive American philosopher (1839-1914), «the most original and the most versatile intellect that the Americans have so far produced» (Encycl. Britt. 1978, XIII, p. 1109). Peirce developed an epistemological theory which outdated cartesianism, and presented new ways of assessing knowledge and its development, containing viewpoints and arguments that still are accepted and constitute the core of modern epistemology. But James' theory was not in line with Peirce's on some decisive points (Peirce, 1905), and Dewey's was in many ways deviant from James'. This confusing situation was pointed out in detail by Emile Durkheim in his lectures on Pragmatism at Paris University 1913-1914, perhaps the most profound assessment ever done of the pragmatists' views on knowledge (Durkheim, 1983). His analysis leaves the reader in great doubt concerning the validity of Dewey's epistemology.

Since there are good reasons to put some question-marks to the validity of Dewey's theory of knowledge, and further, since his educational theory is closely knit to his epistemology on the one hand and on the other to school practices which it has rather profoundly penetrated and influenced almost all over the world, and thus consistently affected important aspects of education — educators should better start to get acquainted with the main characteristics of the theory.

2. *A sketch of Dewey's theory of knowledge*

Two forms of knowledge

In one of his articles on the subject, «The Experimental Theory of Knowledge», Dewey takes a stand against those who held that knowing «is a strictly 'mental' thing» and argues that knowing is an 'intending' thing. He starts the article by writing:

It should be possible to discern and describe a knowing as one identifies any object, concern, or event. It must have its own marks; it must offer characteristic features — as much as a thunder-storm, the constitution of a state, or a leopard. In the search for this affair, we are first of all desirous for something which is for itself, contemporaneously with its occurrence, a cognition, not something called knowledge by another and from without — whether this other be logician, psychologist, or epistemologist. The «knowledge» may turn out false, and hence no knowledge; [...] What we want is just something which takes itself as knowledge, rightly or wrongly (Dewey, 1910, p. 77).

Here Dewey is talking about a «*knowing*». The term chosen could be said to be identical with the expression «knowledge», in particular if one restricts the meaning of the latter to one individual's knowledge. This «knowing» is in Dewey's view a cognition, with its own marks and features. And it is something «for itself» for the person having the specific cognition, «something which takes itself as knowledge». That phenomenon, knowledge, can have two forms.

One is the cognition composed of stored percepts and memories of traits, happenings, relationships, laws, etc. This form contains more or less stable components being relatively independent of specific situations and challenges. For example: I know, and it is also a common knowledge, that water changes into ice at zero degrees Celsius, or 32 degrees

Fahrenheit; and some know that wheat contains 10 percent to 15 percent protein, much of which forms a material called gluten, composed of the proteins gliadin and glutenin.

The other form of knowledge is a cognition activated in a specific, challenging and/or problematic situation, composed of components perceived as the elements constituting that situation and by components that are stored mental elements, which are anticipated as having relevance in the situation at hand, and which are brought forth and used in the conscious considerations activated in order to meet the challenge or solve the problem created by the situation. For example: When playing with my child on the shore, I experience, and may, after the fulfillment of the process, have the «knowing» or knowledge, that to build the sand tower and make the cave in the ground, only the adding of just a specific proportion of water in relation to sand mass secured the cohesiveness of the building material and thus made the constructions possible; or that, when working on my oil painting, I experienced that the mood I intended to express came about just because my not too well rinsed hair-pencil, then dipped into green umbra was placed on the canvas with only one firm, short stroke in exactly that specific context of lines and colors.

It is this exemplified form of cognition or «knowing» or knowledge that Dewey is mostly concerned about and interested in, because it is active, problem-oriented, and pragmatic. It has a relationship to a purpose, it is thus a teleological knowledge. It is a type of cognition containing intelligent suggestions for action. It is a «knowing» that is an instrument for a suitable solution. Dewey's analysis of the characteristics of this form of knowledge resulted in the theory he preferred to call *instrumentalism*, his specific edition of pragmatism.

2.2. *Instrumentalism as a process*

In the article «The development of American Pragmatism» Dewey states:

But the fundamental idea [in pragmatism] [...] is the idea that action and opportunity justify themselves only to the degree in which they render life more reasonable and increase its value. Instrumentalism maintains [...] that action should be intelligent and reflective, and that thought should occupy a central position in life. That is the reason for our insistence on the teleological phase of thought and knowledge. [...] What we insist upon above all else is that intelligence be regarded as the only source and sole guarantee of

a desirable and happy future. [...] [Pragmatism] regards the world as being in continuous formation, where there is still place for indeterminism, for the new, and for a real future. [...] The world is recommencing and being remade under our eyes. [...] Pragmatism and instrumental experimentalism bring into prominence the importance of the individual. It is he who is the carrier of creative thought, the author of action, and of its application. [...] [This philosophy has given] to the individual mind a practical rather than an epistemological function. The individual mind is important because only the individual mind is the organ of modifications in traditions and institutions, the vehicle of experimental creation (Dewey, 1931; McDermott, 1981, pp. 56-57).

The quotation focuses the dynamic characteristic of instrumentalism: That the creation of knowledge is strongly dependent of the single individual, being the stage where «action and opportunity» interact, in order to «render life more reasonable and increase its value». And in the process, intelligence is seen as «the only source and sole guarantee» of a good future, through guiding the individual's adjustment to a world transforming continually.

Dewey's conception of knowledge is emerging from a process containing distinct elements, such as instigating factors, determining factors, and products; but it is neither the elements nor the process. At the point of departure the process is instigated by the perception of an opportunity on which the individual acts —steered by cognitive factors— and if the problem is solved the process comes out with an end product after which it terminates in a psychological profit, the feeling that «life is more reasonable» and that its value has increased. And «action and opportunity» have been justified.

To get a better understanding of Dewey's view on knowledge, let us focus more directly on each of the elements in the action-opportunity process. Action, being an important element, is steered by factors like habits, anticipations, memories, and —first and foremost— by intelligence, an aptitude closely tied to and interwoven with action (Dewey, 1908-1909; Boydston, 1977, pp. 184-185). Opportunity, however, contains the event which in a way presents the problem or challenge, at least different conditions which could be situations, occurrences, objects, etc. (Dewey & Bentley, 1949, p. 145), but also the idea that it might be possible to do something with it. It is something in the ever changing social and material world which could be worked on and altered to the benefit of the individual. When «action and opportunity justify themselves», implied through an interactive process, the concrete outcome could be the modification of traditions, the solution of a

problematic situation, or the release of a creative process. Whatever be the immediate outcome; two others are following in its wake: the experience from the process —rich, varied, erroneous or successful— and the conviction that life is rendered more reasonable and that its value has increased.

In Dewey's view, knowledge has a specific relation to the experience coming from the process. Knowledge is an experienced relation of things (Dewey, 1931; McDermont, 1981, p. 185). Knowledge is something cognitive which draws from and reconstructs past experiences. It is not the experience that is left just after the gratification and termination of the interchange between action and opportunity, although this experience

«is not present in its original form, but is represented with a quality, an office, that of having exited activity and thereby terminating its career in a certain quale of gratification. It is not *S*, but Σ ; that is *S* with an increment of meaning due to maintenance and fulfilment through a process. [...] Here we have a cognitive, but not a cognitional thing. In saying that [something which we sense] is finally experienced as *meaning gratification* [...] we retrospectively attribute intellectual force and function to [the thing sensed] —and this is what is signified by «cognitive»— (o.c., p. 179). Yet the [thing sensed] is not cognitional, because it did not knowingly intend to mean this; but is found, after the event, to have meant it. Nor again is the final experience, the Σ or transformed *S*, a knowledge (o.c., pp. 179-180).

Later on the sensations or memories of the experiences may occur, activated by something. At that time, they are not the same as before. They do not occur as the *S*, nor as the Σ , but as a *S'*.

«The *S'* that recurs is aware of something else which it means, which it attends to effect through an operation incited by it and without which its own presence is abortive, and, so to say, unjustified, senseless. Now we have and experience [...] which is contemporaneously aware of meaning something beyond itself. [...] Both the thing meaning and the thing meant are elements in the same situation. Both are present, but both are not present in the same way. In fact, one is present as *not-present-in-the-same-way-in-which-the-other-is*. [...]

Generalizing [...] we get the following definition: An experience is a knowledge, if in its quale there is an experienced distinction of two elements of the following sort: *one means and intends the presence of the other in the same fashion in which itself is already present, while*

the other is that which, while not present in the same fashion, must become so present if the meaning or intention of its companion or yoke-fellow is to be fulfilled through the operation it sets up (o.c., pp. 182-183).

Characteristics of instrumentalism

Based on the presented quotations and the definition, it is evident that the form of knowledge which Dewey was so preoccupied with is something very personal and psychological. As shown, instrumentalism views knowledge as *individual, transactive* and *subjective*. This is a view opposed to the 'traditional' that sees knowledge as common and objective. Knowledge for Dewey is a verb, not a noun.

Instrumentalism stated further that knowledge was *inconstant, transitory, dependent on situations*, and *relative*; partly based on its subjective character but mainly on what Dewey regarded as a logical and necessary deduction from the fact that nature itself was undergoing continual changes (e.g. Dewey, 1910; Boydston, 1977, p. 6). Also, this view is opposed to the 'traditional' view which regards knowledge as relatively stable, independent of specific situations, and containing generality.

In accordance with Dewey's understanding of knowledge as individual and relative, he also regarded knowledge as *teleological*, that means as *instrumental* for achieving specific goals and thus solving specific problems (Dewey, 1908-1909; Boydston, 1977, p. 180 and p. 185; Dewey, 1910; McDermott, 1981, p. 180).

This view is partly in opposition to the 'traditional' view of knowledge which claims that knowledge as a means to an end is one function that knowledge often serves, but is not a general and necessary characteristic of the phenomenon.

There are at least three other vital points where the instrumental and the 'traditional' view on knowledge depart. The first concerns the role that the senses play in the process of establishing knowledge, the second the question of laws, and the third what should be understood and accepted as true knowledge.

Regarding *sensations*, they were seen as «ludicrously incompetent» to give knowledge of the external world. But

«If we regard them as devices for warning an agent of threatening dangers and for calling out responses which will enable the agent to protect himself and to avoid and destroy obstacles, they are admirably fit for that purpose» (Dewey, 1908-1909; Boydston, 1977, p. 184).

Dewey stated that «the object of sensations is not to mirror or even register the whole external world», but «to indicate the condition of things with respect to which the organism has to act» (l.c.). The former was a futile task, since lasting knowledge could not be built on sensations of a world «still in the process of making» (Dewey, 1908; Boydston, 1977, p. 99), thus «nature as directly and practically experienced does not satisfy the conditions of knowledge» (Dewey, 1909b; Boydston, 1977, p. 6). Based on the latter, sensations were a foundation in the individual's struggle to resolve the problematic, which includes thinking out ways of handling it, creating hypotheses, guessing about their chances of success, comparing them, etc. Thought and imagination create forecasts «as to what present conditions indicate or prophesy regarding future developments» (Dewey, 1908; 1909; Boydston, 1977, p. 185).

Regarding *the question of laws*, Dewey described the 'traditional' view held by intellectuals as

either [conceived] after the analogy of jural and legal ordinances as cast iron decrees which somehow «govern» facts and events; or else as mere sequences and coexistences that happen to be uniformly repeated in these facts and event. [...] Conceived in either of these ways, laws lack intellectual vitality and significance. [...] they mark fixed external limits that have been set so to thinking (o.c., p. 199).

Thus they can be seen as «metaphysical puzzles» (l.c.). In instrumentalism laws are viewed as «organic aids to thinking», they are said to be

the general methods by which we introduce continuity and order in experiences otherwise discrepant and mixed up. They are instrumentalities bridging over the gaps in our experience of things; they are instrumentalities of reducing seeming conflicts to harmony (l.c.).

Dewey thus stressed the functions of laws, especially in relation to the single individual. Laws were important and significant to the degree that they helped individuals find satisfactory solutions to problematic situations, and a secure terminal position. The view is in concordance with the teleological and individualistic foundations of instrumentalism.

The third point, *the question of true knowledge*, is perhaps the one most questioned. «If there was any part of the pragmatic song which

struck a particular discordant note for his hearers, it was probably the account of truth» (Boydston, 1977, p. viii). Traditionally an idea was believed to be true if «the object of one's thought is as one thinks it» (l.c.). Dewey on his part held that ideas — plans of action, hypotheses— were made true by working out as planned (l.c.). The 'traditional' view was that «an idea is true whether we know it or not, and it works because it is true; it is not true because it works» (o.c., p. xiv). But Dewey held that «the effective working on an idea and its truth are one and the same thing — this working being neither the cause nor the evidence of truth but its nature» — (Dewey, 1907; Boydston, 1977, pp. 68-69). If this working on an idea and its truth came out as planned, the result gave «assurance», an expression he seemed to prefer. «But [...] the fulfilling experience is not, as such, complete assurance [...] Assurance, cognitive guaranteeship, follow from it, but are not coincident with its occurrence. It *gives*, but *is not*, assurance» (Dewey, 1910; McDermott, 1981, p. 180).

Elaborating further on this view, Dewey concludes

That truth denotes *truths*, that is, [...] combinations of meanings and outcomes reflective viewed, is, one may say, the central point of the experimental theory. Truth, in general or in the abstract, is just a name for an experienced relation among things of experience: that sort of relation in which intents are retrospectively viewed from the standpoint of the fulfilment which they secure through their own natural operation and incitement (o.c., p. 192).

This retrospective reviewing of the intents «from the standpoints of fulfilment» is as clearly an individual act as the conclusions must be relative, taking into account conditions and circumstances. The concept 'truth' is thus an individual one, and a relative one. And its meaning is in line with another description he gave: «Those ideas that really “work” [...] are *true*» (Dewey, 1908-1909; Boydston, 1977, p. 185).

3. *Emile Durkheim's critique of Dewey's epistemology*

3.1. *Views on reality and thought*

Discussing and assessing pragmatism, included instrumentalism, from a sociological point of view, and at the outset in the framework of a historical perspective, Durkheim focused on the relation between reality and our conceptions of it, particularly the views held by empiricists and rationalists — whether we could feel secure that our

ideas mirrored reality. He stated that both empiricism and rationalism hold that «an idea is true when this mental representation corresponds accurately to the object represented» (Durkheim, 1983, p. 11). But while for the empiricists this means that the mind simply copies external reality, the rationalists were of the opinion that «this reality does not consist of objects perceivable by the senses, but is an organized system of ideas with their own existence, a system which the mind must reproduce» (o.c., pp. 11-12). According to both doctrines, knowledge was to be found outside the individual, it was 'given' and could be uncovered by systematic efforts.

This view of reality and thought, seeing the mind «as separated from reality as by a kind of gulf, with mind on one edge and reality on the other, both belonging to different worlds» (o.c., p. 38), was not shared by Dewey. Durkheim said that

Pragmatists see things quite differently. In their view, thought and reality are part of *one and the same process*. The series sensation, idea and action is perfectly continuous. [...] There is thus a very close kinship between reality and thought. [...] here the whole of reality is on the same level, with the mind in things and things in mind, with no discontinuity between them (o.c., pp. 38-39).

In this view, knowledge becomes, in one sense, hidden away because it does not take into account *human consciousness*. But knowledge ascends, according to Durkheim, in a series of stages: First sensations («it provides us with merely fleeting knowledge» (o.c., p. 82)). Then images («representations at this stage begin to take on an appearance of having a life on their own» (l.c.)). And thirdly concepts («[they] have a very low motive power [...], isolated from acts, and [...] posited for their own sake» (l.c.)). In order to have this development, to produce knowledge, consciousness was at least as important as action or doing. Durkheim therefore concluded that pragmatists denied the specific nature of knowledge and consciousness.

The role of consciousness is not to direct the behaviour of a being with no need of knowledge: it is *to constitute a being who would not exist without it*. [...] Consciousness is therefore not a function with the role of directing the movements of the body, but the *organism knowing itself* (l.c.) [...] For consciousness to come into being, there must be gaps or spaces in action; and it is through these that the being becomes aware of himself. [...] Reducing the conscious being to nothing but his actions means taking from him the very things which makes him what he is. Moreover, consciousness find such a role distasteful, for it forms only schematic plans and can never take immediate command over real behaviour (o.c., p. 83).

3.2. *Knowledge in relation to action*

Durkheim also argued against the view held by Dewey that knowledge existed only for the sake of action, and that thought was subordinated action. He pointed to the facts that consciousness can hinder action instead of facilitating it, referring as one example the pianist who being able to «play a given piece of music perfectly will make mistakes if he thinks about what he is doing» (o.c., p. 79); and «inversely that action can paralyze thought, and this is constantly happening. The psychology of attention indicates it» (l.c.).

«The *conditions* of thought and those of action are different. [1] First thought is a *hyperconcentration* of consciousness, and the greater the concentration, the smaller the circle of reflection. Action, on the other hand, is a sudden release. Acting means *externalizing oneself*, and spreading out beyond oneself. Man cannot at one and the same time be both entirely *Within* himself and entirely *outside* himself. [2] Secondly, thought, the reflecting consciousness, demands *time*. The faster a representation passes through consciousness, the greater the proportion of the unknown it contains. We can only truly know a representation in successive stages, part by part. To know it, we must analyze it, and to analyze it we must fix it, hold it in our consciousness; that is to say, keep it motionless for a certain time. Action does not call for that kind of fixity. What it wants is the exact opposite (o.c., p. 80).

Action requires movements in flux, and if they stop and consciousness appears, it is both because something have to fill the gap which movement does not occupy and because «the suspension of movement have made consciousness possible» (o.c., p. 81). His conclusion was that «thought and action are not akin in nature» (l.c.). Quite opposite to the pragmatists' claim that knowledge had only practical aims, the necessary inference from Durkheim's reasoning was that knowledge was «radically different from practice» (l.c.).

3.3. *The individualistic perspective*

Another complaint he made against instrumentalism was its individualistic perspective on knowledge. Durkheim claimed that «the nature of the individual is too limited to explain alone all things human. Therefore, if we envisage individual elements alone, we are led to diminish unduly the amplitude of the effects we have to account for» (o.c., p. 67). Durkheim advocated a social approach, i.e. a sociological one. In his view, at least the confirmation of an individually acclaimed

knowledge needed a collective approval. Truth must be a conviction delt by a group, after deliberating on it. Therefore «the sociological point of view has the advantage of enebling us to analyse even that august thing, truth» (o.c., p. 68).

3.4. Durkheim's view of truth

But Durkheim's main concern was the pragmatists' view of truth. Both the empiristic and the rationalistic dogmas admitted

that truth was given, either in the sensory world (empiricism) or in an intelligible world, in absolute thought or Reason (rationalism). [...] Thus truth, in all dogmatic conceptions, could be no more than transcription of an *external* reality. Since truth exists outside individual minds, it is *impersonal*. Consequently, it is *ready-made*. [...] Finally, according to dogmatism, truth is not only external and impersonal but also a completed system — a complete whole independent of time and becoming» (o.c., p. 12).

Pragmatism and instrumentalism did not share view (as shown above), but, in Durkheim's words, tended to destroy the *cult of truth* (o.c., p. 2). They did not recognize «the necessary and obligatory nature of certain truths» (o.c., p. 2), «that truth imposes itself with a kind of 'inevitability' before which the mind can only bow [1]. Thus truth is an opinion that possesses intrinsic rights, and all investigators are *obliged* to accept it» (o.c., p. 6). These rights, «the obligatory force of logical judgements» (o.c., p. 2), were denied by the pragmatists, who claimed instead that «truth [...] is something to be *achieved*» (o.c., p. 4). He summarized the pragmatists' doctrine of thruth in three points: 1. Truth is human. 2. It is varied and variable. 3. It cannot be a copy of a given reality (o.c., p. 37).

Durkheim questioned these viewpoints. Concerning the first, he held that truth could not be exclusively an individual property. Truth had to be a collective experience, something on a higher level than an individual conviction, something forcing itself on the minds of the many, as a collective agreement on the validity of the facts or relations at hand. In the history of mankind, the collective had taken care of ideas and representations, and these understandings received a higher prestige than conceptions coming from the single individual. «[There] are probably partial truths, but all these partial truths come together in the collective consciousness and find their limits and their necessary complements» (o.c., p. 92).

Concerning the second point, he agreed that pragmatists have shown «how truth is enriched and becomes more complex».

But does it necessarily follow that truth changes, properly speaking? If, for example, new species develop, are the laws of life changed thereby? In the same way, it is certain that new social species have appeared; but does this give us the right to conclude from this that the laws of life in society are no longer the same? (o.c., p. 24).

Looking at social reality as an example, the fact is that it is heterogenous. «There is no one religion, one morality and one political regime, but different types of religion, types of morality and types of political organization. In the practical order, diversity may be considered as established» (o.c., p. 70). Further, speculation and its value varies. As a consequence truth varies in time and space, but not because it is the useful that is true. Granting that «for every object of knowledge there are differing but equally justified ways of examining it. [...] all these partial truths come together in the collective consciousness» (o.c., p. 92), So truth is not varied and variable, it is one as expressed by the collective consciousness. From this conviction he builds a short bridge over to what becomes his alternative to the pragmatists' third doctrine. From the statement that «the task of speculative truth is to provide nourishment for the collective consciousness» (l.c.) he continues:

This means that we can answer the pragmatists' objection, that says that if the sole function of truth is to express reality, it is merely redundant; it must *add* something to reality, and if it does, it is no longer a faithful copy. The fact is that truth, the 'copy' of reality, is not merely redundant or pleonastic. It certainly 'adds' a new world to reality, a world which is more complex than any other. That world is the human and social one. Truth is the means by which a new order of things becomes possible, and that new order is nothing less than *civilization* (l.c.).

Durkheim's deep insight was voiced at a time when it had no chance to be recognized. Today there is hardly an excuse for not contemplating it. Acceptance and understanding of the connection between the view of truth and civilization implies rejection of the relativism claimed by pragmatists and instrumentalists. There should be much to gain by such a reconsideration.

4. *The epistemological influence on education*

When William Heard Kilpatrick summed up «the principal contribution of John Dewey to American education» (Kilpatrick, 1940, p. 471), he presented four generalizations [2]. Remarkably, none had to do with the cognitive outcome of schooling and learning or with the knowledge that the new education had made it possible for children to have. The closest he came to this central question was mentioning «the effort to think more adequately» (o.c., p. 473). May be Kilpatrick in his obvious proud summary mirrored correctly the main understandings at the time of the Deweyian contributions to education. And it may have been in line with this understandings to ignore and omit subject content—and knowledge whatsoever—since that matter no longer was of main concern for adherents to instrumentalism.

Based on Dewey's educational writings, Kilpatrick created «The Project Method» and became the most outspoken advocate for Dewey's pedagogical ideas. The core in his new educational method was that children should engage in «acts of individual purposing» (Kilpatrick, 1918, p. 5) or acts of group purposing. These acts were tied to units or projects chosen by the children. They constituted a fluid, not preplanned, but daily evolving curriculum, where subjects were substituted by what he called «purposeful activity» (Tenenbaum, 1951, pp. 135 and 179) flavoured by interdisciplinarity. The acts were tied to a specific method of study or inquiry, containing a path with fixed gates: the approach to the solutions, the planning of a strategy, the carrying out, the critical assessment and the terminal and overall evaluation of the project, supported in all parts by discussion and intercommunication. Since knowledge was relative and fluid, the schools should better concentrate on problem-solving projects rather than on transmitting knowledge framed into subjects. Although the project method recommended a pedagogy more radical than Dewey himself had suggested in his writings, he both accepted and praised it (Dewey, 1951).

Before the second world war a variety of types of «Reform Schools» were founded, besides «The Project Method», all based on instrumentalism. And in the following years the philosophy has seeped into the majority of national school programs and become their theoretical base, partly because of the high value it places in the individual learner, the responsibility it attributes him, the motivation for school work it creates, and the possibilities it offers for achieving socially beneficial changes.

But in the wake of the results of these programs a societal critique

of their learning outcomes and gains of knowledge have rolled against them like monumental waves. And the content of the criticism was always and everywhere the same: the learners were ignorant of main aspects of the cultural heritage and of basic skills, their insights and knowledge thus less solid than expected, and as a result found insufficient as a basis for further studies.

It is a sad fact that the critique could have been anticipated on the grounds that several fundamental premises concerning the characteristics of knowledge was missing in instrumentalism, as shown. Let us therefore look closer at some of the views advocated by instrumentalism which had detrimental effects on learning outcome:

1. The accumulated knowledge within a given culture is to every new generation a 'heritage' transmitted through education. As well as there is no merit in denying the value and importance of individual experiences and subjective knowledge, no one should underestimate the vast amount of stored, steadily growing, commonly accepted and fairly objective knowledge in this world. The view that the schools should not feel obliged to transmit central parts of this knowledge in a systematic way—if not by directly teaching traditional subject content at least by respecting the organized knowledge collected in subjects and by utilizing the insights and perspectives they represents—is not totally convincing. The validity of the arguments on which this viewpoint is based can be questioned. It must be regarded as a modest claim on schools that they see the teaching of our general knowledge within a wide range of subjects as a main objective, and that they agree to be assessed on the ground of how well they succeed in that task. The execution of this task may have different solutions, among which could be individual as well as group projects with its focus on broad interdisciplinary themes as well as on narrow subject content elements. But the central teaching loyalty should be the transmission of vital subject knowledge and the creation of insights into culture, society, and nature for which this knowledge is a prerequisite.

2. Although there may be inconsistencies in our accepted common knowledge—some parts being dependent on context and others, in the long run, being transitory—, it can be argued that the knowledge regarded as reliable at a certain point of time, at that time is the most vital component of man's social and cultural environment and existence. So it is for each individual here and now as well as it may be throughout its whole life span. This knowledge affects everyone to such an extent that not having acquired fundamental parts of it not only reduces one's possibilities of solving daily problems, but may also block or render

impossible social acceptance and admittance into desirable groups. Other parts of it are vital for acquiring excellence in almost every field of work within our societies. Based on such facts it is difficult to understand why a preplanned curriculum should be banned. Not only will its advantage be an efficient and well balanced route for a longer period of schooling. But foremost will an offer of selected knowledge agreed upon as important for inhabitants within a specific cultural or national group, protect against local or regional curricula of dubious merit.

3. It is obvious that knowledge has an instrumental and teleological function; still one has to accept the idea that there is important knowledge which main function is not to solve problems at hand, immediate or remote. Instead knowledge may serve functions as e.g. enlightenment, theoretical pleasure and insight, or entertainment. To focus onesidedly on only the teleological function, which Dewey did, implies that other functions of knowledge are neglected. Further, when such an epistemological understanding becomes transferred to an educational context, it is obvious that the functions of knowledge neglected by the theory have slim chances to be acknowledged and activated in teaching and learning. If teaching and learning is based only on a teleological view of knowledge, negative effects can hardly be avoided. In an educational context epistemological functions as enlightenment and theoretical pleasure and insight has to be assessed as important guidelines and goals, and thus valued for their own sake as well as for the secondary role they may play in promoting the teleological function itself.

4. Our senses are doubtlessly efficient instruments for detecting threatening objects to the individual, thus alarming it. But the senses do have other very important functions as well, although mostly neglected by instrumentalism. The human senses have played an important role in scientific development as well as in daily life due both to systematic training of the ability to sense and perceive as well as to the extension of this ability through a wide variety of ingenious devices. Our schools have been reminded of the task of sense training since the days of Comenius, and should still find it both challenging, important and rewarding.

Although the senses alone do not create knowledge, knowledge will in very many cases not be a reality without minute and reliable sensations. Since schools should promote and transmit knowledge to its pupils, it follows that they ought to have a program for the development of children's sensibilities connected to meaningful and problem oriented tasks of study within all the school's fields of learning.

Dewey's position was that «the necessary training of sense perception [...] should grow out of the conditions and needs of what is being done» (Dewey, 1908-1909; Boydston, 1977, p. 185). The statement shows a somewhat restricted understanding of the requirements in order to train a reliable sense perception. And it underestimates what should be modestly regarded as 'necessary training' of the ability if it should efficiently enhance the acquisition of knowledge. To relate the training only to 'the conditions and needs of what is being done' can hardly be accepted as a sufficient effort, in particular if 'what is being done' is understood only as a spontaneous, accidental manual and practical behavior where the aim of the activity is not the training but something else, e.g. to solve a problem, or to communicate.

5. To regard laws of knowledge and science mainly as individual organic aids to thinking seems to be a gross oversimplification. Since the days of Bruno, Kepler and Newton, laws have been precise and efficient means of expressing a universal relationship in a short form. The instrumentalists' view on laws is not valid and can not be upheld. Certainly, schools should not, based on the claim made by the instrumentalists, underestimate the importance of having children learn basic laws. Laws are still most important elements of knowledge, and basic premises for reasoning and inferences. It should not be regarded as a wise policy either to drop the teaching of laws in schools or to expect that children — given enough time and proper methods of learning — develop the laws themselves through work on units and projects.

But Dewey argued also that when studying «the social world» the ideal must be «to use information in constructing a vivid picture of how and why men did thus and so; achieved their successes and came to their failures» (Dewey, 1909c; Boydston, 1977, pp. 192-193). Here he recommends an intellectual effort in order to produce hypotheses about relationships and causes, may be about laws. This recommendation to sketch social causal relationships is surprising in the view of his strong skepticism against the validity of laws in general. And it is still more based on the well known controversies among historians and social scientists concerning the validity of such laws. It seems inconsistent to argue that laws within the sciences —where our knowledge about the how and why is more certain than within the social subjects— are less important to learn in schools than it is to work on the construction of a vivid picture of why the course of events in the social world came out in the way it did.

6. The statement that «Instruction carried on upon [...] [the] basis [recommended] would teach the mind that all ideas, truths, theories,

etc., are of the nature of *working hypotheses*» (Dewey, 1908-1909, o.c., p. 188) was and is an overgeneralization. Belief in this statement or thesis develops an attitude of unfounded relativism and may at the same time foster a feeling of self-confidence and omnipotence, destructive to the attainment of knowledge and insight. Teachers in the schools that subscribe to the thesis — thus accepting that virtually *all* ideas, truths and theories are of the described nature — who are successful in transferring the view on to their pupils, could easily promote in them the described attitude. As a result they may ask why knowledge is important or should be learned when it is not certain and dependable? The attitude may thus damage their motivation for learning and have consequences for the outcome of the schooling.

7. The theoretical dependency Dewey constructed between knowledge and activity, doing, is not generally valid, as pointed out by Durkheim. All the same, from this conviction was deduced the influential educational slogan «learning by doing». Its merits and undergoing are widely acknowledged, as they should be, but its limitations rarely observed. The most important one must probably be the fact pointed out by Durkheim, that thought, firm insights, and the establishment and attainment of knowledge, demands time; that the process has to be stopped; that we can only know representations in successive stages; that they must be fixed and analysed in order to generate knowledge. Dewey mentioned only shallowly the need for time for analyses, systematizing, and assessing. And memorizing, the old — and often misused — educational activity, which gave the individual time for reflection, had no place in the process of 'doing'. In the reform schools these activities seldom found any regular place in the unfolding. Doubtlessly the characteristic of the Deweyian educational method — learning by doing — easily created an unproductive and superficial attitude toward the attainment of knowledge as well as it could nourish teaching habits restricting sufficient time and space for children's cognitive belaboring of representations in order to get a fairly correct, well stored and efficient amount of clarified ideas.

5. *Concluding remarks*

Changes in educational systems and teaching practice do not come about quickly. But given the nature of shortcomings generated in educational practice throughout this century caused by the influence of instrumentalism, educational systems stand in need of changes. The understanding of the value of knowing has to be upgraded and

strengthened among school leaders and teachers, and a genuine respect for the systematic relationships in the different areas of human knowledge has to be fostered. At the same time one should dismiss the exaggerated trust in action as a straight boulevard to knowledge, the preference of doing to knowing or «the *conception* to the *act*» (Peirce, 1900; Wiener, 1958, p. 332), and instead make as an ideal «to render ideas and things reasonable» (l.c.).

Further, within curriculum there is an urge for reassessing the selection of content which should make up the child's learning experiences and knowledge products. Taking on this task one could start by studying different models for categorizing the significant fields or areas of human knowledge, accepting the premise that pupils deserve knowledge and experience from all of them in a reasonable, balanced proportion. One model is grouping into the aesthetic, the religious, the scientific, the ethical, and the common daily-life knowledge. Another may be that one sketched by Peirce: physical education, aesthetic education, education in the ways of the world and a moral education (Peirce, 1882; Wiener, 1958, p. 337). To prepare citizens for a meaningful and rich life, schools need to have a program which offers a balanced menu of important content and experiences from these different fields. That will not come out by chance nor has it happened so far by the help of either scholastical traditions or the activity-oriented instrumentalistic education.

The main reason for seeking these changes are «nothing less than *civilization*» (Durkheim, 1983, p. 92). Civilization needs men and women with a respect for knowledge, who are literate or knowledgeable in the basic fields that constitute it, and who see truth as both a fundamental characteristic of knowledge and as the presupposition for all fair, sincere communication and for meaningful social prediction and interaction. Relativism, explicit as well as implicit, has to be abandoned as a virtue in the struggle for knowledge and truth in our educational systems [3].

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NOTES

- [1] Durkheim is here using a phrase from Charles S. Peirce, *Collected Papers*, V. 407 (Hartshorne & Weiss (Eds.),(1934).
- [2] They are: 1. Increased human interest into school life and work, regarding the pupil as a living person; 2. Introducing pupil initiative, encouraging their responsibility, and promoting child-teacher communication; 3. Engaging teachers in pupil, school and community problems and mobilizing the school as a conscious agency in the improvement of culture in order to extend democracy; 4. Doing away «in thought and practice from obscure and unscientific assumptions inherited from the past» and taking into account human concerns of personality along with the effort to think more adequately (o.c., pp. 472-473).
- [3] The author expresses his gratitude to Professor Elliot Eisner and to Professor Nel Noddings, Stanford University, School of Education, for their willingness to read the article and to offer valuable comments.

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SUMARIO: IMPLICACIONES EDUCATIVAS DE LA TEORÍA DEL CONOCIMIENTO DE DEWEY. CONSIDERACIONES CRÍTICAS.

Son muchas las razones que explican el notable influjo que Dewey ha ejercido en la teoría y la práctica pedagógicas. De entre todas ellas, quizá destaquen tanto el fuerte interés que el propio Dewey siempre sintió sobre cuestiones que en nuestros días concentran la atención de muchos educadores —como la cuestión social, las relaciones entre democracia y educación, el bienestar del ser humano en general, y particularmente el de la joven generación, etc.— como su habilidad como escritor, lo que le llevó a mantener un continuado seguimiento de sus lectores por su obra.

Es indudable, por consiguiente, que los seguidores de la obra y el pensamiento de Dewey se hayan sentido atraídos por él tanto por razones psicológicas como por motivos políticos y de cambio o reforma intelectual. En cambio, es improbable que muchos maestros y educadores lo hayan hecho por *razones epistemológicas*, quizá porque sus escritos sobre teoría del conocimiento —que no son escasos— sean poco conocidos entre ellos. Por lo demás, la historia de la educación muestra pocos casos en los que se evidencie tan claramente la conexión entre la teoría de la educación, las prácticas educativas y la epistemología de una bien asentada teoría del conocimiento.

Este artículo quiere ocuparse, precisamente, del análisis de las implicaciones educativas de la teoría del conocimiento de Dewey, cuyo detenido estudio muestra diversas debilidades e inconsistencias, debido a la confusa situación que determinarían los diversos influjos que recibió el propio Dewey. En efecto, inspirada como estuvo la epistemología deweyana en la filosofía pragmatista de William James —buena parte de cuyos argumentos más centrales estuvieron fuertemente influidos por los de Charles Sanders Pierce, a pesar de que la teoría de aquél no se encuentre propiamente en la línea de este último—, su teoría del conocimiento se desvió de diverso modo del planteamiento de su original inspirador.

El artículo comienza con una esquemática presentación de la teoría del conocimiento de Dewey, en la que se da cuenta de las dos formas fundamentales de «conocimiento» que Dewey describe: el conocimiento como un asunto estrictamente «mental» y el conocimiento como asunto «intencional». Posteriormente, se analiza el significado que Dewey da a esta segunda clase de conocimiento —que acaba denominando como «instrumentalismo»— y el sentido y características principales del «instrumentalismo como un proceso» (inconstante, transitorio, dependiente de las situaciones y relativo). Para Dewey, el conocimiento tiene una específica relación con la experiencia, constituyéndose como un proceso; establece una relación experiencial con las cosas. La crítica a la teoría del conocimiento de Dewey viene de la mano de Emile Durkheim, quien contrariamente al planteamiento empiricista y racionalista según el cual una idea es verdadera cuando la representación mental se corresponde fielmente con el objeto representado, considera que el conocimiento asciende a través de una serie de estadios: sensaciones, imágenes y conceptos. Durkheim se opone en definitiva a la tesis de Dewey de que el conocimiento existe sólo en función de la acción, y que el pensamiento se subordina a la acción.

A partir de estas ideas, el autor extrae las implicaciones de la epistemología deweyana para la educación, centrando el análisis de las prácticas educativas en Dewey en siete puntos principales:

- a) El rechazo del papel de la escuela como vehículo de transmisión cultural del conocimiento.
- b) El rechazo consiguiente a todo currículum prefijado.
- c) La pérdida del valor educativo del conocimiento por sí mismo, reducido a su función instrumental.
- d) La visión restrictiva de los requerimientos necesarios en orden al desarrollo mediante la educación de las capacidades de los sentidos que hacen posible la adquisición del conocimiento.
- e) La gran simplificación y empobrecimiento pedagógico que supone considerar las leyes del conocimiento y de la ciencia sólo como herramientas individuales de pensamiento.
- f) La consideración de todas las ideas, verdades, teorías, etc., como simples hipótesis de trabajo, que representa una generalización fomentadora en los alumnos de actitudes relativistas y sentimientos de omnipotencia.
- g) Las dificultades que —junto a sus indiscutibles méritos— plantea el célebre lema del «*learning by doing*», basado en la idea de una dependencia entre conocimiento y acción que, como puso de manifiesto Durkheim, no es absolutamente válida.

KEY WORDS: Dewey's pedagogy. Dewey's epistemology. Epistemology and education. Outcome of schooling.